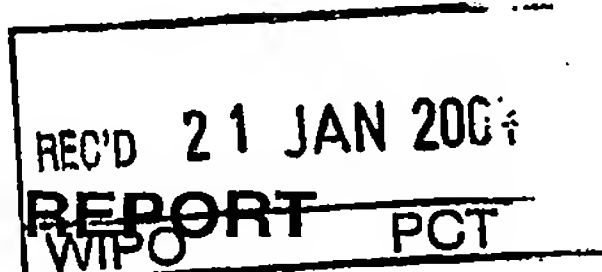


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference 47215	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IT 02/00657	International filing date (<i>day/month/year</i>) 15.10.2002	Priority date (<i>day/month/year</i>) 15.10.2002
International Patent Classification (IPC) or both national classification and IPC D21F9/00		
Applicant A. CELLI NONWOVENS S.p.A. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 15.09.2003	Date of completion of this report 20.01.2004	
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Pregetter, M Telephone No. +49 89 2399-8379 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 02/00657

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-12 as originally filed

Claims, Numbers

2-38 as originally filed

1 filed with telefax on 07.01.2004

Drawings, Sheets

1/9-9/9 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT_02/00657

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-38
	No: Claims	
Inventive step (IS)	Yes: Claims	1-38
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-38
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: US-A-4169699
D2: US-B-6233787
D3: US-A-4268235
D4: US-A-4157724

2. Document D1 is considered to represent the closest prior art to the subject-matter of present independent claim 1. This document discloses (cf. in particular column 4, lines 17-35; figure 5):

"Device for forming a web of fibers, comprising: a fiber distribution head; a forming wire (27) movable under said head; a suction means (28) located on the side of said forming wire (27) opposite from said head; within said head, a chamber into which a flow of gas, in which said fibers are suspended, is directable, the chamber having a bottom opening closed by a screen mesh (18) which is essentially parallel to said forming wire (27) and which faces the latter, and an agitator member (19) inside said chamber, arranged directly above said screen mesh, for agitating and distributing the fibers on the surface of said screen mesh facing the interior of said chamber."

The subject-matter of present claim 1 differs from this disclosure in that said screen mesh (18) is made continuous and movable along a closed path around said chamber, the portion of said mesh parallel to and facing the forming wire (27) moving along a path which is essentially parallel to said forming wire (27) and wherein a plurality of agitator members (19) is provided, comprising a plurality of rotating shafts (21) which are parallel to each other and to the screen mesh and orthogonal to the direction of advance of said forming wire (27), said shaft (21) being provided with shaped profiles to agitate the fibers in said chamber.

Thereby, the a compact arrangement for a dry forming device is obtained and the efficiency of the dry forming process can be increased.

Document D1 provides a further foraminous member positioned between the screen mesh and the forming wire, this foraminous member being made continuous and movable along a closed path around said chamber. Furthermore, document D1 only provides a single agitating member having one shaft arranged orthogonal to the direction of advance of the forming wire.

Document D2 also discloses a device for dry forming a web of fibers. The fibers are fed into a forming box and agitated and distributed by a plurality of shafts arranged parallel to each other and to the forming wire and orthogonal to the direction of advance of said forming wire.

There are no indications in these documents which would cause a person skilled in the art to modify the teachings of one document in view of the other, in particular replace the agitating stage of document D1 composed of a the orthogonal shaft, the combined screen mesh and continuous foraminous member by a single continuous member and a plurality of parallel shafts, allowing to omit the fixed screen mesh in document D1, or to provide a continuous foraminous member in the arrangement of document D2.

Document D3 and D4 provide further background knowledge.

Therefore, no indications for the subject-matter of present claim 1 can be found in any of the documents D1-D4. The subject-matter of claim 1 is therefore considered as being novel and involving an inventive step with respect to the cited prior art (Article 33(2) and (3) PCT).

The industrial applicability of the device according to claims 1 is obvious (Article 33(4) PCT).

3. Claims 2-38 define additional features of the invention according to claim 1 and as such also meet the requirements of the PCT with respect to novelty, inventive step and industrial applicability with respect to the cited prior art.
4. The following deficiencies are also to be mentioned:
 - a. To meet the requirements of Rule 5.1(a)(ii) PCT, the document D1 should

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IT02/00657

have been also identified in the description and the relevant background art disclosed therein should have been briefly discussed.

- b. With respect to dependent claims 9, 11, 12 and 38, it is not clear what is to be understood by the term "point" (Article 6 PCT).

CLAIMS

1. Device for dry forming a web of fibers, comprising: a fiber distribution head (1); a forming wire (3) movable under said head; a suction means (5) located on the opposite side of said forming wire from said head;
- 5 within said head, a chamber (9) into which a flow of gas, in which said fibers are suspended, is directed, the chamber having a bottom opening (9A) closed by a screen mesh (17) which is essentially parallel to said forming wire (3) and which faces the latter; and agitator members (45) inside said chamber, arranged directly above said screen mesh (17), for agitating and distributing
- 10 the fibers on the surface of said screen mesh facing the interior of said chamber; characterized in that:
- said screen mesh (17) is made to be continuous and movable along a closed path around said chamber, the portion of said mesh parallel to and facing the forming wire moving along a path which is essentially
 - 15 parallel to said forming wire; and
 - said agitator members comprise a plurality of rotating shafts (47) which are parallel to each other and to the screen mesh and orthogonal to the direction of advance (f3) of said forming wire, said shafts being provided with shaped profiles (51) to agitate the fibers in said chamber.
- 20